

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (previously presented) A method for identifying a compound that modulates taste signaling in taste cells, the method comprising the steps of:
 - (i) contacting the compound with a taste cell specific G-protein beta polypeptide, the polypeptide comprising greater than 70% amino acid sequence identity to an amino acid sequence of SEQ ID NO:3 or SEQ ID NO:5; and
 - (ii) determining the functional effect of the compound upon the polypeptide.
2. (original) The method of claim 1, wherein the polypeptide specifically binds to polyclonal antibodies generated against SEQ ID NO:3 or SEQ ID NO:5.
3. (original) The method of claim 1, wherein the functional effect is a chemical effect.
4. (original) The method of claim 1, wherein the functional effect is a physical effect.
5. (original) The method of claim 1, wherein the functional effect is determined by measuring changes in intracellular cAMP, cGMP, IP3, DAG, or Ca²⁺.
6. (original) The method of claim 5, wherein the changes in intracellular cAMP or cGMP are measured using immunoassays.

7. (original) The method of claim 1, wherein the functional effect is determined by measuring binding of radiolabeled GTP to a G protein comprising the polypeptide, or to the polypeptide.

8. (original) The method of claim 1, wherein the functional effect is determined by measuring changes in intracellular Ca^{2+} .

9. (original) The method of claim 1, wherein the polypeptide is expressed in a cell or cell membrane.

10. (original) The method of claim 9, wherein the functional effect is determined by measuring changes in the electrical activity of the cell or the cell membrane expressing the polypeptides.

11. (original) The method of claim 10, wherein the changes in the electrical activity are measured by an assay selected from the group consisting of a voltage clamp assay, a patch clamp assay, a radiolabeled ion flux assay, and a fluorescence assay using voltage sensitive dyes.

12. (original) The method of claim 9, wherein the cell is a eukaryotic cell.

13. (original) The method of claim 1, wherein functional effect is determined by measuring changes in the level of phosphorylation of taste cell specific proteins.

14. (original) The method of claim 1, wherein the functional effect is determined by measuring changes in transcription levels of taste cell specific genes.

15. (original) The method of claim 1, wherein the polypeptide is linked to a solid phase.

16. (original) The method of claim 15, wherein the polypeptide is covalently linked to a solid phase.

17. (original) The method of claim 1, wherein the polypeptide is recombinant.

18. (original) The method of claim 1, wherein the polypeptide is from a human, a mouse or a rat.

19. (original) The method of claim 1, wherein the polypeptide has an amino acid sequence of SEQ ID NO:3 or SEQ ID NO:5.

20. (previously presented) A method for identifying a compound that modulates taste signaling in taste cells, the method comprising the steps of:

(i) expressing a taste cell specific G-protein beta polypeptide in a host cell, wherein the G-protein beta polypeptide has greater than 70% amino acid sequence identity to a polypeptide having a sequence of SEQ ID NO:3 or SEQ ID NO:5;

(ii) expressing a promiscuous G-protein alpha polypeptide and a taste cell specific G-protein coupled receptor in the host cell,

(iii) contacting the host cell with the compound that modulates taste signaling in taste; and

(iv) determining changes in intracellular calcium levels in the host cell, thereby identifying the compound that modulates taste signaling in taste cells.

21. (previously presented) The method of claim 20 wherein the G-protein polypeptide has greater than 70% amino acid sequence identity to a polypeptide having the sequence contained in SEQ ID NO:3.

22. (previously presented) The method of claim 20 wherein the G-protein beta polypeptide has greater than 70% amino acid sequence identity to a polypeptide having the sequence contained in SEQ ID NO:5.

23. (previously presented) The method of claim 20 wherein the promiscuous G-protein alpha polypeptide is G α 15.

24. (previously presented) The method of claim 20 wherein the promiscuous g-protein alpha polypeptide is G α 14.

25. (currently amended) The method of claim 20 wherein the taste cell specific G-protein coupled receptor is ~~GPCR-B3~~ G-protein coupled receptor B3.

26. (currently amended) The method of claim 20 wherein the taste cell specific G-protein coupled receptor is ~~GPCR-B4~~ G-protein coupled receptor B4.

27. (currently amended) The method of claim 20 wherein the host cell is ~~HEK-93~~ HEK-293.

28. (previously presented) The method of claim 20 wherein the G-protein beta polypeptide has an amino acid sequence identical to SEQ ID NO:3.

29. (previously presented) The method of claim 20 wherein the G protein beta polypeptide has an amino acid sequence identical to SEQ ID NO:5.--